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11-13-2017

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Laszczka, Aleksandra; Splitstoser, Jeffrey C.; and Giersz, Miłosz, "Pre-Columbian Textile Structures at Castillo de Huarmey, Peru" (2017). *PreColumbian Textile Conference VII / Jornadas de Textiles PreColombinos VII*. 15.
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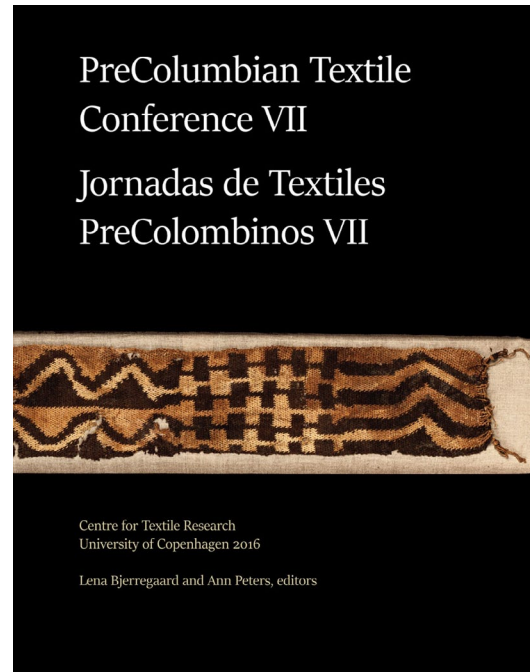
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In *PreColumbian Textile Conference VII / Jornadas de
Textiles PreColombinos VII*, ed. Lena Bjerregaard
and Ann Peters (Lincoln, NE: Zea Books, 2017), pp.
253–258

doi:10.13014/K26D5R59

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Pre-Columbian Textile Structures at Castillo de Huarmey, Peru

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Abstract

Systematic excavations at the Castillo de Huarmey archaeological site, located on the North Coast of Peru, enabled researchers to collect an immense number of fabrics. During the first season of textile investigations, carried out in July of 2014 by American and Polish researchers, 724 objects were examined, including textile fragments, yarns, and cordage. A general description of the basic structures indicates a variety of weaving techniques. Although the collection consists mainly of plain weave of all kinds, new structures such as three-dimensional cross-knit looping and feather-mosaic work were recognized, none of which were encountered among textiles collected from the surface in previous decades.

Keywords: archaeology, textiles, Castillo de Huarmey, Wari, fabric structure

Estructuras Textiles Precolombinas en Castillo de Huarmey, Perú

Resumen

Las excavaciones sistemáticas en el sitio arqueológico Castillo de Huarmey, ubicado en la costa norte del Perú, han facilitado la recolección de un número inmenso de textiles. Durante la primera etapa de las investigaciones de los textiles, llevada a cabo en julio de 2014 por investigadores de Polonia y de los Estados Unidos, se examinaron 724 objetos, los que incluían fragmentos de telas, hilos, y cuerdas. Una descripción general de las estructuras básicas indica una gama de diversas técnicas de enlace. Aunque la colección mayormente consiste de muchos tipos de tela llana, se han reconocido estructuras novedosas tales como anillado complejo tridimensional y mosaico plumario, ninguna de las cuales se habían encontrado entre los textiles recolectados en la superficie en décadas previas.

Palabras claves: arqueología, textiles, Castillo de Huarmey, Wari, estructura textil

The Castillo de Huarmey archaeological site on the Peruvian North Coast is one of the most important ceremonial centres of pre-Hispanic Middle Horizon period (ca. 600-1050 AD), with Wari's culture expansion. The site has been the subject of study by Polish and Peruvian archaeologists since January 2010. Castillo de Huarmey is located in the suburbs of the modern city of Huarmey, less than four kilometres from Pacific Ocean, and occupies an area of forty-five hectares. The monumental architecture was built with adobe bricks and stones, employing a relatively uncommon architectural technique of using enormous wooden beams, on the summit of a large rocky spur. Its core was formed by enormous

chullpa-tower-shaped mausoleums with a regular orthogonal plan, several stories high. A crucial discovery was made in 2012 when the first un-looted Wari royal tomb was found (Giersz 2014, Giersz 2016). The burial chamber contained the remains of sixty-four female individuals, fifty-eight of whom were accompanied with valuable ceremonial offerings and grave goods, such as gold, pottery, spindles and fabrics, which indicate they held high social status and imply they specialized in the production of yarns and textiles of high quality (Prządka Giersz 2014). Because the majority of the textiles have not yet been studied, this paper provides only a general description of a portion of the fabric collection.

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Textiles from Castillo de Huarmey: History of Investigations

In prior decades, the archaeological site has been regularly looted by treasure hunters called *huaqueros*. As a result of this large-scale pillaging of the site, many textiles have been destroyed and their archaeological context lost. In the 1960s a German archaeologist, Heinrich Ubbelohde-Doering, collected from the surface of the site 155 textile fragments, which are held at the Staatliches Museum für Völkerkunde in Munich, Germany (Prümers 1990, Prümers 2000), locally known as the Museum Fünf Kontinente. An important study of the textiles from Castillo de Huarmey, which are now part of the Museo Amano collection, was done by William Conklin (1979), who analysed their weave structures and iconographic representations. Conklin claimed that during the Middle Horizon, the site of Castillo de Huarmey, also called Campanario, was under Wari and Moche cultural influences, although archaeological excavation at Castillo de Huarmey did not confirm any Moche material remains that would support the aforementioned statement (Giersz 2016).

In the middle of 1980s, Heiko Prümers carried out an archaeological field survey which yielded 366 textile pieces whose iconographical and technological analyses were submitted in his doctoral dissertation. Additionally he took into account textile pieces collected by Ubbelohde-Doering, as well as weaving utensils, some wooden artefacts, and ceramic fragments found on the surface (Prümers 1989, Prümers 1990). However, prior to 2010 the site was never subjected to systematic excavations of its primary archaeological contexts.

In January 2010, Polish specialists from the University of Warsaw made a full non-destructive survey of the site and the first archaeological excavation of undisturbed contexts, and in 2012 they were the first to unveil a royal Wari burial on Peru's north coast. Of the many discoveries of the Castillo de Huarmey Archaeological Project's researchers, led by Miłosz Giersz from the University of Warsaw, of particular importance to the present study is a large collection of archaeologically excavated fabrics. Although their preservation and condition is not ideal, especially those coming from the main chamber that were exposed to the processes of human decomposition, many fragments are in good condition, including those found outside the main chamber. The most important archaeological objects discovered during excavations were presented in the book, *Castillo de Huarmey: El mausoleo imperial wari* (Giersz, Pardo 2014). One of the chapters is dedicated to a selected group of conserved fabrics collected in 2010, 2012 and 2013 from various areas of the site. Consisting of bags, miniature textiles, bands and headdresses, they show a diversity of forms and

techniques; however, they are a scant percentage of the entire textile collection.

Description of the Textile Collection

In July of 2014, Jeffrey Splitstoser, from The George Washington University, United States, and Aleksandra Laszczka, a student from the University of Warsaw, Poland, carried out a preliminary evaluation of the textile collection. The objective was to estimate the number of items, note the variety of weaving techniques, and describe their states of preservation in order to determine the scope of research for the following seasons. The result of this collaboration is a fabric inventory, in which 724 objects were examined, including textile fragments, yarns, and cordage. These materials were recovered from both primary burial context and disturbed layers of the principal monumental compound where the Wari ancestors were buried and worshipped. Since the inventory was completed, the collection essentially doubled after excavations carried out in 2015, and it will continue to grow every season. And although the inventory represents only approximately half of the current collection, the results of the present reconnaissance revealed the unique character of textiles that is probably equally applicable to the larger collection – specifically, the collection consists of fabrics made by highly skilled spinners and weavers who used multiple complex weaving techniques to create sophisticated iconographic motifs. The results of this preliminary inventory form the basis for the discussion below.

Methodology and Terminology

The classification scheme that was used to describe archaeologically excavated fabric structures from Castillo de Huarmey was developed by Irene Emery (1966) and published in her book, *The Primary Structures of Fabrics*. Emery's scheme was modified and updated by Ann Pollard Rowe in two publications: *Warp-Patterned Weaves of the Andes* (1977), and "After Emery: Further Considerations of Fabric Classification and Terminology" published in *The Textile Museum Journal* (1984). Our inventory classified the Huarmey textiles according to their fabric structures.

Single-Element Structures

While the majority of textiles are made with two or more sets of elements, Castillo de Huarmey weavers produced fabrics and accessories made of single-element structures, such as knotted looping and cross-knit looping. These techniques were used to make nets, hats, and even bags. There were also fabrics, usually tassels, made with oblique interlacing,



Fig. 1. Three-Dimensional cross-knit looping figurine (photo by Miłosz Giersz)

and there are individual instances of linking and twining. Other structures include wrapping used to wrap cords and make spools of yarns.

In fact, one of two structures that were encountered in the present study but not by Prümers is a single-element structure: three-dimensional cross-knit looping in the form of a little figure that looks like it has two horns and a tail (Fig. 1). What remains today is a single figure, but in the past it was most likely a chain of multiple figures that were stitched to the edge of a fabric.

Two or More Sets of Elements

The vast majority of the collection has structures made of two or more sets of elements that are interlaced. In other words, they have warps, wefts, and sometimes additional elements (e.g., extra warps, wefts, stitching elements, etc.). Not surprisingly, the most common structure is plain weave.

Plain Weave

A preliminary look at the inventory suggests that the collection consists primarily of plain weave of all kinds: there

are 390 fragments made in simple plain weave, which is 53,9% of entire collection, including 323 examples of balanced or predominant warp or weft plain weave, forty-six of warp-faced plain weave, and twenty-one of weft-faced plain weave. Approximately 20% of plain weave was decorated with stripes or bands in another colour. Among the many objects made exclusively of plain weave include fragments of forty-eight bags and forty-two miniature tunic fragments, called *uncus*. In addition, seven specimens consist of plain weave covering cane or other vegetable fibers to form a helmet, called *tocados*.

Twenty-five fragments (3,5% of the studied collection) are made with discontinuous interlocked elements. Eleven of them are plain weave with discontinuous, interlocked warps and wefts. Six fragments have discontinuous interlocked warps and the remaining eight have discontinuous interlocked wefts. Most of these are balanced or warp-predominant plain weave; however, there are two cases of discontinuous warp and weft that are weft faced, and one specimen is warp-faced. In most cases, the fragments are large enough with sufficient design area present to make confident interpretations of fabric structure; however, it is always possible that elements that span the

entire length or width of a fabric might in fact have been discontinuous in the original fabric.

Tapestry is a specific type of plain weave using discontinuous wefts woven in weft face, which hides the warps. It is undoubtedly one of the most versatile techniques, allowing weavers to obtain almost any desirable pattern. In the Huarmey textile collection, 138 fragments of tapestry (19,1% of the studied collection) were documented where the most representative technique combines slit and reinforced-slit tapestry, which is observable in forty-nine pieces. This structure is usually associated with outlined motifs. Slits without reinforcements are present in thirty-six pieces, and reinforced slit tapestry is found in fourteen textiles. There are also thirty-nine tapestry fragments made with single interlocks between warps. In most cases, the decoration is geometric or figurative. It is worth noting that there are several fabrics with tapestry combined with other structures. Usually the second structure is simple plain weave (sometimes as separate panels stitched together), but there is also one example of tapestry with gauze. Because tapestry is frequent, it is possible to distinguish some textile forms that have tapestry decoration, including twenty-five bands, thirteen bags, and sixteen probably shirt, or *uncu*, fragments.

Float Weaves

Twill is a float weave characterized by “diagonal alignment of floats” (Emery 1966: 92). It is not frequently encountered among Huarmey fabrics. It was found in only three textiles (0,4% of the collection), and in one example it was the only structure associated with the web; however, two of these specimens are multi-web construction, and the float-weave web panels were stitched to panels of plain weave. Diamond twill (2x1) is represented in two fragments, and one fabric is made with 2x1 twill weave.

Compound Weaves

Compound weaves involve either an extra sets of elements, such as warps or wefts, that are supplementary or complementary. The extra elements are usually added to make patterns. 14,1% of the inventoried collection has patterning made either with plain-weave-derived structures or with supplementary and/or complementary elements combined with plain weave.

• Complementary Elements

Seven fragments (1% of the collection) were encountered with complementary warp patterning. Patterns are usually stripes or geometric forms.

• Supplementary Elements

Another decorative structure, comprising eighty fragments (11% of the collection), consists of supplementary elements added to plain weave.

There are three fragments with supplementary warps and seventeen fragments with supplementary wefts. In many other cases, extra elements formed floats – both supplementary warp-pattern weaves (twenty-nine fragments) and supplementary weft-pattern weaves (fourteen fragments) were encountered; they are always in association with plain-weave grounds. Stripes are the most representative decoration for this structure, but there are some figurative motifs.

There are seventeen fragments in the collection that have a plain-weave ground with patterning that takes the form of modular bands made with plain weave with supplemental, discontinuous wefts woven in weft face. In his article, William Conklin (1979: 165) called this category of textile: “plain weave with modular weft bands”. Supplemental, discontinuous wefts woven in weft face were also added to gauze-weave grounds.

• Double Cloth

Another type of compound weave involves the addition of complete weave structures (i.e., an interlacing fabric with both warps and wefts). These are called double weaves or double cloth, and double cloth was encountered in fifteen pieces (2,1% of the entire sample). In almost all cases, one face has colourful dots, or highlights, made with supplemental, discontinuous wefts woven in weft face with weft substitution.

Interacting Elements

In addition to fabrics with two or more sets of interlacing elements, which were discussed above, the present study encountered fabrics with interacting elements that cross and re-cross.

• Gauze

Gauze is a structure where the warps cross and re-cross. Gauze was encountered in eight specimens, representing 1,1% of the study collection. Gauze was never found alone but always with plain weave. In three cases, gauze was associated with supplementary, discontinuous wefts woven in weft face (tapestry) including, in one case, a gauze and slit-tapestry band.

Accessory Structures

The present study encountered several structures that are accessory to fabrics including multiple types of embroidery and featherwork.

Embroidery

At least two types of embroidery were encountered including cross-knit looping, cross-knit loop stitching, and running stitch.



Fig. 2. Featherwork mosaic attached to plain-weave fabric (photo by Miłosz Giersz)

• Cross-Knit Loop Stitch

Cross-knit loop stitch differs from cross-knit looping in the following way: cross-knit looping is a fabric made with a single-element that does not depend on a ground fabric to remain intact. Cross-knit loop stitch is a type of embroidery that is added to the edge or centre of a fabric. It loses its integrity if the ground fabric is removed. Prümers (1990) encountered simple cross-knit loop stitching embroidered around the edges of fabrics and occasionally in the centre of them. The present study encountered the remnants of a single example of cross-knit loop stitch, consisting of four colours similar to those found in the fragment with running stitch below. The stitching forms a circular pattern embroidered on plain-weave that is now gone except where there is cross-knot loop stitching.

• Running Stitch

There is a single example of running stitch on weft-faced plain weave making a three-colour, double-faced, geometric design.

Featherwork

Another structure not encountered by Prümers, which is also an accessory structure, is featherwork mosaic, which was encountered in a single specimen, a belt or band. The featherwork makes a figurative design with colourful feathers that were cut into shapes and attached to a white, cotton, plain-weave fabric, probably using a resin glue (Fig. 2).

Several other textile fragments are decorated with feathers that were knotted onto strings, and the strings were attached to plain-weave cotton fabrics with whip stitching. This type of featherwork is also an accessory structure.

Painting

The collection consists of six fabrics painted with geometric designs. Most were painted plain weave, but at least one seems to have been plain weave with supplemental wefts that formed floats.

Resist (Tie Dye)

In addition to structural decoration, the inventory encountered four fragments of balanced plain weave decorated with resist-dye techniques, called tie-dye, where the fabric was tightly wrapped and tied with something, probably cotton cords, which prevented dyes from penetrating them, leaving areas of the fabric that remained undyed.

Summary

A preliminary look at the inventory indicates that the collection consists primarily of plain weave of all kinds, from balanced to warp- and weft-faced, often with additional elements used to making patterns. As the inventory suggest, the majority of textile structures, were also encountered by Prümers as published in his doctoral dissertation. However, we were able to distinguish two new structures, a

three-dimensional cross-knit looping and featherwork mosaic, that were not encountered by Prümers during his surface survey of the site.

Without doubt, the textiles excavated from the archaeological site of Castillo de Huarmey need detailed analyses of all kinds (e.g., structural, dye, iconographic, functional, etc.). While structure investigations, such as the present study, which is in its initial stages, can widen our knowledge about textile practices in ancient Peruvian cultures (e.g., Splitstoser 2009, Splitstoser et al. 2010), other investigations, including iconographical analysis, are also needed to fully understand the Wari cultural phenomenon on the North Coast of Peru.

Acknowledgments

The 2010-2014 field seasons of the Castillo de Huarmey Archaeological Project, which produced studied assemblage of textile material were supported by grants from the Ministry of Science and Higher Education of the Republic of Poland (2970/B/H03/2009/37), the National Science Centre of the Republic of Poland (NCN 2011/03/D/HS3/01609), the National Geographic Society (EC0637-13, GEFNE85-13, GEFNE116-14 and W335-14), and Compañía Minera Antamina. The ongoing investigation of the textile findings from Castillo del Huarmey is supported by grant from the National Science Centre of the Republic of Poland (NCN 2015/19/N/HS3/00880).

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